

WHAT IS CLAIMED IS:

5 1. An optical communication device, comprising:
 a laser diode emitting an optical transmission beam;
 a reflective mirror that reflects a first portion of the
optical transmission beam to an end face of an optical fiber;
and

10 an edge illumination monitor photodetector, having a
light receiving facet that receives a second portion of the
optical transmission beam, the monitor photodetector producing
a control signal as a function of the received second portion
of the optical transmission beam.

15 2. The optical communication device of claim 1 further
comprising a focusing lens optically coupled to the reflective
mirror for focusing the reflected optical beam into the end
face of the optical fiber.

20 3. The optical communication device of claim 1, wherein
the laser diode comprises an edge emitting laser.

25 4. The optical communication device of claim 1, wherein
the laser diode and the reflective mirror are coupled to a TO
header, and wherein the reflective mirror is swept at an angle
to reflect the first portion of the optical transmission beam
to the optical fiber.

30 5. The optical communication device of claim 4 wherein
the reflective mirror is swept an angle in the range of about
43-47 degrees relative to the TO header.

5 6. The optical communication device of claim 5 wherein
the light receiving facet of the edge illumination monitor
photodetector is swept at an angle relative to the TO header.

10 7. The optical communication device of claim 1 further
comprising a gain stage coupled to the edge illumination
monitor photodetector that converts the control signal to a
voltage proportional to the intensity of the optical
transmission beam and a control that compares the voltage to a
reference voltage and adjusts drive current of the laser diode
in accordance with the comparison.

15 8. The optical communication device of claim 2, further
comprising a laser diode isolator disposed between the
focusing lens and the optical fiber.

20 9. The optical communication system of claim 1 wherein
the monitor photodetector comprises a p-i-n photodetector.

 10. The optical communication system of claim 1 wherein
the monitor photodetector is coupled to the reflective mirror.

25 11. The optical communication system of claim 1 wherein
the reflective mirror comprises a silicon reflective mirror.

 12. A method for transmitting an optical signal,
comprising:

30 emitting the optical signal;
 reflecting a first portion of the optical signal to an
end face of an optical fiber;

receiving a second portion of the optical signal on a
light receiving facet of an edge illumination monitor
5 photodetector; and

 generating a control signal proportional to intensity of
the optical signal as a function of the received second
portion of the optical signal.

10 13. The method of claim 12 further comprising converting
control signal to a voltage that is proportional to intensity
of the optical signal and adjusting intensity of the optical
signal in accordance with the voltage.

15 14. The method of claim 12 further comprising focusing
the reflected optical signal into the end face of the optical
fiber.

 15. An optical communication device, comprising:

20 a laser diode emitting an optical transmission beam from
a first facet of the laser diode;

 a reflective mirror that reflects a first portion of the
optical transmission beam emitted from the first facet of the
laser diode to an end face of an optical fiber; and

25 an edge illumination monitor photodetector, having a
light receiving facet that receives a second portion of the
optical transmission beam emitted from the first facet of the
laser diode, wherein the monitor photodetector produces a
control signal as a function of the received second portion of
30 the optical transmission beam.

 16. The optical communication device of claim 15 further
comprising a focusing lens optically coupled to the reflective

mirror for focusing the reflected optical beam into the end face of the optical fiber.

5 17. The optical communication device of claim 15, wherein the laser diode comprises an edge emitting laser.

10 18. The optical communication device of claim 15, wherein the laser diode and the reflective mirror are coupled to a TO header, and wherein the reflective mirror is swept at an angle to reflect the first portion of the optical transmission beam to the optical fiber.

15 19. The optical communication device of claim 18 wherein the reflective mirror is swept an angle in the range of about 43-47 degrees relative to the TO header.

20 20. The optical communication device of claim 18 wherein the light receiving facet of the edge illumination monitor photodetector is swept at an angle relative to the TO header.

25 21. The optical communication device of claim 15 further comprising a gain stage coupled to the edge illumination monitor photodetector that converts the control signal to a voltage proportional to the intensity of the optical transmission beam and a control that compares the voltage to a reference voltage and adjusts drive current of the laser diode in accordance with the comparison.

30 22. The optical communication device of claim 16, further comprising a laser diode isolator disposed between the focusing lens and the optical fiber.

23. The optical communication system of claim 15 wherein
the monitor photodetector comprises a p-i-n photodetector.

24. The optical communication system of claim 15 wherein
the reflective mirror comprises a silicon reflective mirror.